

AMENDED CLAIMS

D1

38. An improved propellant composition comprising a fuel, reduced energy binder, and an oxidizer, wherein said reduced energy binder includes a cured high molecular weight adipate binder polymer including poly(tetramethylene adipate) cured from an uncured hydroxy-terminated adipate prepolymer wherein the molecular weight (MW_n) of the uncured prepolymer is above 4000 and an amount of energetic plasticizer wherein the plasticizer to polymer ratio is less than about 1.6:1.

D2

43. A reduced energy binder for energetic compositions comprising an amount of cured poly(tetramethylene adipate) polymer cured from a hydroxy-terminated adipate prepolymer, having an uncured prepolymer molecular weight (MW_n) of at least 4,000 in combination with an amount of one or more energetic plasticizers, wherein the ratio of plasticizer to polymer is less than 1.6:1.

D3
Cont.

51. An improved high solid propellant composition comprising by weight:

- E*
- (a) about 10% cured poly(tetramethylene adipate) (cured from a hydroxy-terminated adipate prepolymer $MW_n \geq 6000$) binder polymer;
 - (b) about 11% nitroglycerin plasticizer;
 - (c) about 2.5% triacetin plasticizer;

- (d) about 22% aluminum; and
(e) about 53% ammonium perchlorate oxidizer.

52. An improved high solids propellant composition comprising by weight:

- (a) about 7% cured hydroxy-terminated poly(tetramethylene adipate) (cured from a hydroxy-terminated adipate prepolymer, $MW_n \geq 6000$) binder polymer;
(b) about 6.5% n-butyl-2-nitratoethyl nitramine;
(c) about 1.4% triacetin;
(d) about 22% aluminum;
(e) about 60% ammonium perchlorate; and
(f) about 2% dicyandiamide.

53. An improved reduced energy binder for energetic compositions comprising an amount of cured hydroxy-terminated poly(tetramethylene adipate) polyester polymer cured from a hydroxy-terminated adipate prepolymer having an uncured prepolymer molecular weight (MW_n) of at least 6,000 in combination with an amount of one or more energetic plasticizers and wherein the ratio of plasticizer to polymer is less than 1.6:1.

Rewrite claim 62 and 63 as follows:

62. An improved high solids propellant composition comprising by weight:

- (a) about 11% cured hydroxy-terminated poly(tetramethylene adipate) (cured from a hydroxy-terminated adipate prepolymer, MW_n about 6,000) binder polymer;
- (b) about 12% plasticizer selected from the group consisting of nitroglycerin and trimethylolethane trinitrate and combinations thereof;
- (c) about 22% aluminum; and
- (d) about 53% ammonium perchlorate.

63. An improved high solid propellant composition comprising by weight:

- (a) about 11.3% cured hydroxy-terminated poly (tetramethylene adipate) (cured from a hydroxy-terminated adipate prepolymer, MW_n about 6,200) (prior to curing) binder polymer;
- (b) about 12.2% nitroglycerin plasticizer;
- (c) about 22% (30 μ) aluminum; and
- (d) about 53% (200 μ) ammonium perchlorate oxidizer.